



MRT news

newsletter of the MRT project

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ROLLING OUT THE TRAINS

MALAYSIA'S first train assembly plant at Rasa, Hulu Selangor, is running at full steam, producing the electric trains which will serve the MRT Sungai Buloh-Kajang Line. See full story on Page 2.

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FULL SWING AT THE RASA TRAIN ASSEMBLY PLANT

By Nik Haizan Nik Zambri

ASSEMBLY of the first two train sets for the MRT Sungai Buloh-Kajang Line is almost complete and will soon be transported to the Sungai Buloh Depot for dynamic testing.

The trains are the first two of 58 sets which will be assembled in the country's first train assembly plant in Rasa, Hulu Selangor. The purpose built plant for the KVMRT project is solely owned and operated by SMH Rail Sdn Bhd. The consortium partnership with Siemens AG and Siemens Malaysia Sdn Bhd has resulted in technical transfer to a local company which has employed more than 50 staff from the Rasa area.

Each train set has four cars and can carry 1,200 passengers.

Work to assemble the trains began immediately after the first two train car bodies arrived in Westport on 29 June 2014. Since then till the end of November 2014, another 14 train car bodies had arrived.

Other components for the trains come from various parts of the world. For instance, the bogies are produced in Graz, Austria while the IT components are from Vienna. There are also components, such as the LED lighting, and the chairs, which are manufactured by Malaysian companies.

LMG Rail, a subsidiary of SMH Rail, has set up its own cable cutting and manufacturing department which at the completion of the MRT Sungai Buloh-Kajang Line, will have cut and laid cables with the equivalent length from Kuala Lumpur to Butterworth and back.

The company has also developed its own stainless steel 3D CNC pipe bending manufacturing facility, the only one of its kind in Malaysia.

All these components are transported to Rasa where they will come together to form completed train sets.

The trains will also undergo static testing at the plant while dynamic testing will be carried out at the Sungai Buloh Depot after they leave the plant.

The time taken to assemble one train set is about 30 days. The plant has two assembly lines, allowing work on four trains sets to be carried out at the same time.

The assembly involves eight work stations, each with specific tasks being carried out. The first four work stations involve fitting in components to the train car bodies while the subsequent four work stations see bogies (wheels) being assembled and fitted to the train bodies.

Once a train car body arrives at the Rasa plant, it is off-loaded and brought to Workstation One. Here, thermal insulation is installed in the interior of the train car body. This insulation prevents extreme heat inside the train.

Cable ducts for the heating, ventilation, air conditioning (HVAC) unit are also installed. These works take about four days.

Before they reach the workstation, the cables are measured to the required lengths and placed into steel framework. These are then brought over to the workstation to be fitted onto the train bodies.

The train car bodies are then moved to Workstation Two where more cables and air ducts for the train's other systems are installed. These are installed inside the train car body as well as underneath the train.



RAISED • Train bodies about to begin the assembly process

The driver's consoles are also installed at this workstation. Although the MRT train will be driverless, two drivers' consoles – at both ends of the train – are still needed so that they can be manually driven should the automatic system fail.

At Workstation Three, the ceiling, side wall and end wall panels are fitted. More cabling works are carried out underneath the train.

At Workstation Four, the final one for the train car bodies, the interior finishing is installed. This includes handrails, passenger seats and fire extinguisher installation. Notices, signage and labels inside the trains are also placed at this stage.

The fitted train car bodies are then ready to be transferred to the bogie line workstations.

While the train car bodies are being fitted, the bogies are also being assembled, tested and readied.

(cont. on page 3)



UNDERCARRIAGE • Bogies ready to be assembled underneath the train bodies.



TRANSFORMED • View of the interior of a train car when it arrives at the plant in Rasa (1), fitted with insulation (2) and undergoes interior finishing (3).



A YEAR OF PROGRESS FOR THE PROJECT

from the desk of the CEO
**DATUK WIRA AZHAR
ABDUL HAMID**

ALL too soon, we will have to say goodbye to 2014.

As the year comes to a close, we can take stock on what has been a very hectic year. This is the third year of construction for the MRT Sungai Buloh-Kajang Line and I am happy to recall what we have achieved during its 12 months.

Most significant of all, the construction of our line reached the 50% mark in September 2014. Now, as at 30 November 2014, the progress of our project stands at 56.8%, with elevated and system works at 47.1% and the underground works at 71.8%.

As we sail past the halfway point, we can really see construction of the project reaching a very advanced stage.

For our elevated section, piling work is virtually completed. Around 85% of piers for the MRT elevated guideway and stations have been built while the construction of guideway spans are moving at a feverish pace, with more than 50% of the entire length constructed.

For our underground works package, 90% of our tunnels have been built, with around 1.2km in the stretch between the Pudu Launch Shaft and Pasar Seni MRT Station left to excavate. Construction of permanent structures for all seven underground stations are well under way.

At the pace that we are doing, I am confident that we will just about touch the 60% completion mark by the end of the year.

Passing the midway point of the project also means that focus will now turn to the System Works portion of the Project. This edition of MRT News ushers in this new phase by focusing on what is going to be the most recognisable feature of the MRT Sungai Buloh-Kajang Line - our trains.

You may have seen visuals of our train in past editions of MRT News. Those were however artist impressions or the live-sized mock of our trains. What you see now on the cover and in Page Two of this newsletter are of the actual trains themselves which are being assembled in our contractor's train assembly plant in Rasa, Hulu Selangor.

The first two train sets are almost fully assembled and once completed, this first pair of trains will be transported to our Sungai Buloh Depot where they will undergo dynamic testing.

We are also about to see track laying work for the main line begin. Sections of the elevated guideway have been handed over to our trackwork contractor for them to carry out preliminary work. Track-laying work had in fact been going on throughout this year within our Sungai Buloh Depot, with the laying of all 24km of tracks almost completed.

The second half of this year unfortunately saw a fatal accident take place. On the evening of 18 August 2014, a guideway span between two piers which was still under construction toppled over, instantly killing three of our contractor's workers when they were buried underneath.

To this day, I maintain that the lack of emphasis on safety practices had resulted in the pointless loss of the lives of Mr Mohammad Alauddin Mollik, Mr Mohammad Elahi Hossain and Mr Mohammed Faruk Khan. I believe the Department of Occupational, Safety and Health will take the necessary action against the parties found responsible for the accident.

Meanwhile, as the head of the project, I have decided to take responsibility for the incident. As you may already know, I have tendered my resignation as Chief Executive Officer of MRT Corp.

I hope this incident serves as a lesson to everyone on the need to place safety as their top-most priority. My sincere wish is for such accidents will never recur in the MRT Project.

Thank you.

Azhar



GOOD DRENCHING • All completed trains will go through the water test arch to ensure there are no leaks.

(cont. from page 2)

A bogie is the frame which carries the wheels and upon which the train car bodies will be attached. Besides supporting the train car bodies, bogies also stabilise the train while it is running. Bogies also absorb shocks and vibration a train may face while operating.

Each train car will have two bogies, which will be installed underneath the connection between the train cars.

At Bogie Line Workstation One, pre-assembly of the cables and piping are done. This takes about two days.

The various components of a bogie, such as the frame, wheels, cabling and piping, are then put together in Bogie Line Workstation Two.

At Bogie Line Workstation Three, the fitted train car bodies are placed onto their bogies. Wheel load testing is also done here.

Finally at Bogie Line Workstation Four, electrical testing for each train car takes place. Continuity tests are done to ensure that all cables and ducts are functioning properly. Ground connections are also tested on all circuits to ensure they work properly.

After approximately 27 days, the train set is ready for water testing at the water test area. The trains will go through a high pressured water arch. The sides of the vehicle, the end, underfloor and roof, as well as the doors and windows will be tested for water tightness. This is to ensure there are no leaks on the train during operations.

Once assembly of the train set is completed, it will be transported to the biggest train depot in Southeast Asia in Sungai Buloh.

More testing and commissioning will be carried out there to ensure they operate perfectly before operations begin in December 2016 for Phase One from Sungai Buloh to Semantan. Phase Two involves the rest of the line becoming operational in July 2017, allowing trains to operate from Sungai Buloh to Kajang.

Throughout the process of assembly as well as testing and commissioning, Siemens in conjunction with the LMG Quality team would be carrying out close monitoring and checks to ensure good quality and high standards of work in the finished product.

OUT OF THE LIMESTONE

By Leong Shen-li



■ **DONE** • The Inai 2 Tunnel Boring Machine after its breakthrough at the Pudu Launch Shaft on 22 October 2014. Its breakthrough marked the completion of tunnelling beneath Jalan Bukit Bintang and the challenging Kuala Lumpur Limestone section of the tunnel.



■ **DEPRESSION** • One of the sinkholes which appeared in Jalan Bukit Bintang.

TO the thousands of people who were walking or travelling on Jalan Bukit Bintang on 23 June 2014, it was just like any other day.

However, some 15m below the hustle and bustle at street level, history of sorts was being made. The Inai 2 Tunnel Boring Machine (TBM) excavating the tunnel for the MRT Sungai Buloh-Kajang Line had moved from excavating hard limestone rock into less dense earth comprising sedimentation and eroded rock - what geologists call the Kenny Hill Geological Formation.

This transition meant that tunnelling work through the Kuala Lumpur Limestone Formation had been completed. Inai 1 - Inai 2's "twin" TBM excavating a parallel tunnel - had made the transition earlier on 10 June 2014.

Before tunnelling commenced, soil investigations had more or less pinpointed the transition locations for the two TBMs - beneath Jalan Bukit Bintang in front of Pavilion's Louis Vuitton Boutique for Inai 1 TBM, and in front of Westin Hotel's front door for Inai 2. There were smiles on the faces of the engineers when the two TBMs experienced drops in the excavation face contact pressure, indicating for real that they had successfully made the transition from the hard limestone rock to the softer soil.

The transition was celebrated because it meant that tunnelling work in the most difficult portion of the MRT Sungai Buloh-Kajang Line underground alignment was over.

The Kuala Lumpur Limestone Formation, which lies below the eastern half of Kuala Lumpur, is often described as a tunnelling engineer's nightmare because it is one of the most challenging geological formations to tunnel through. About 40% of the underground alignment for the MRT Sungai Buloh-Kajang Line was through this formation.

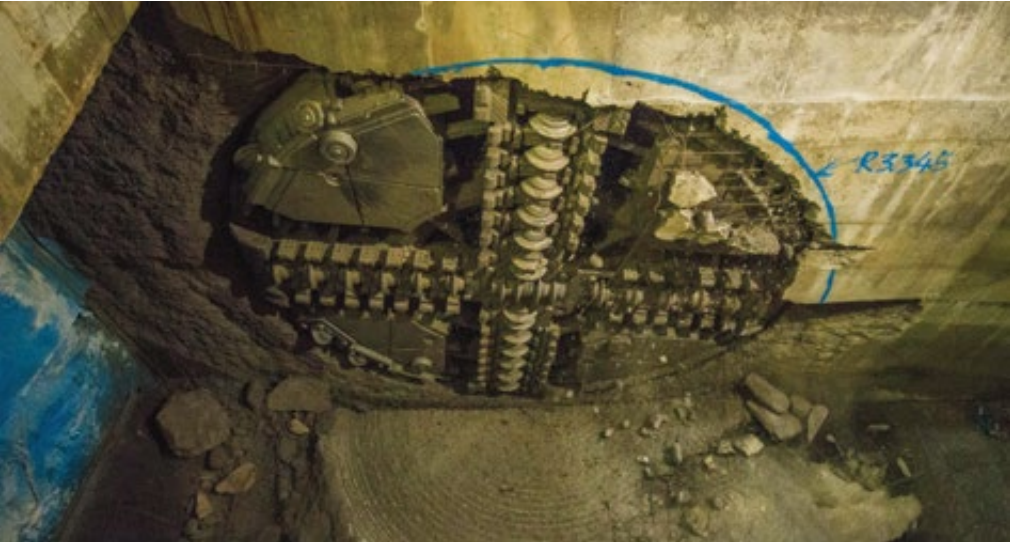
The Kuala Lumpur Limestone Formation's extreme karstic characteristics is the result of the hard limestone bedrock being eroded by rain water over time. This had created many deep channels, cavities and underground caverns, which may be filled with loose topsoil or water. They could also be completely empty.

While excavating the tunnel, the TBM had to mine through hard rock and soft soil at irregular intervals. Maintaining the correct pressure of the TBM during excavation was extremely tricky. A sudden drop in pressure will result in the soil collapsing while too much pressure will cause the soil to heave upwards. Either situations can result in sinkholes forming at the surface.

Mass Rapid Transit Corporation Sdn Bhd Project Director Mr Marcus Karakashian said completing the task of excavating the tunnel through the Kuala Lumpur Limestone Formation was a huge achievement.

"Despite the challenges, we were able to do it with minimal problems. This made the achievement a lot more significant," he said.

Recognising the risks of tunnelling through the limestone formation, all steps to prevent or minimise such incidents had to be taken. Underground Works Contractor, MMC Gamuda KVMRT (T) Sdn Bhd took steps ranging from ensuring adequate soil investigation works to designing a new type of TBM, to reduce these risks.



■ **LOWER TUNNEL** • Breakthrough of the Inai 1 Tunnel Boring Machine at the Pudu Launch Shaft on 17 October 2014.

The new TBM, called the Variable Density Tunnel Boring Machine was the first of its kind in the world and was designed jointly by MMC Gamuda and world-renowned TBM manufacturer Herrenknecht AG of Germany.

While tunnelling was carried out, personnel were stationed at the surface directly above the TBM. If any soil movement was detected, the Emergency Response Team would be deployed and immediate action to ensure the safety of the public, such as closure of roads, implemented. Information about road closures and diversions would be quickly disseminated via the media, social media and the MRT Project website.

Despite the risks, tunnel excavation work in the karstic section of the alignment proceeded relatively smoothly. Since tunnel excavation began on 30 May 2013, the Project had experienced two incidents of sinkhole appearance.

Both were at Jalan Bukit Bintang within the last 500m of tunnelling in the Kuala Lumpur Limestone Formation. Tunnelling for the rest of the alignment had been virtually incident-free.

MMC Gamuda Construction Manager Mr Ubull Din Om said this was a huge improvement from the SMART Tunnel experience, which involved tunnelling through the same geological formation. That project experienced 41 sinkhole incidents over its 9km alignment.

"On a per km basis, there were 4.5 sinkholes per km for SMART versus only 0.3 sinkholes for the Sungai Buloh-Kajang Line. It's a major improvement by any standard," he said.

The inconvenience from road closures aside, the sinkhole incidents did not cause any injury or property damage. By mid-July 2014, road conditions in the area had returned to normal.

After the transition from the Kuala Lumpur Limestone Formation to the Kenny Hill Formation, both Inai 1 and Inai 2 TBMs continued excavating tunnels beneath Jalan Bukit Bintang, through the Bukit Bintang MRT Station box and onwards to the Pudu Launch Shaft.

At this shaft, Inai 2 will be decommissioned while Inai 1 will continue to Merdeka Station and then to Pasar Seni MRT Station in March next year where its job will be completed. This will mark the conclusion of tunnelling works for the MRT Sungai Buloh-Kajang Line.

KEEPING WORKSITES SAFE

By Leong Shen-li



■ **WORKER SAFETY** • Personal protection equipment such as helmets, vests, safety boots, and others such as harnesses when working at height, are mandatory when in the worksite.



■ **GOOD START** • A tool box briefing is held at the beginning of every work day to ensure that work proceeds according to the prescribed and safe work method.

SAFETY has become a hotly discussed topic for the MRT Project recently.

The unfortunate incident on 18 August 2014, where the lives of three workers - Mr Mohammad Alauddin Mollik, Mr Mohammad Elahi Hossain and Mr Mohammed Faruk Khan were lost due to the toppling of an MRT guideway span, brought to focus the issue of safety at MRT Project construction sites.

Investigations into how the accident occurred showed that had the usual work sequence and construction method been followed, the tragic event could have been averted.

This further underscored the importance of adhering to proper work methods being a fundamental part of ensuring safety at construction worksites.

DESIGNING A WORK METHOD

Workplaces are inherently dangerous places because of the activities being carried out.

Injury or even death can result from being hit by heavy objects that are being lifted or moved; being pierced by sharp objects; falling into deep trenches or ditches; being crushed by heavy load; being maimed by dangerous machinery which are not operated properly; falling while working at height; suffocating from fumes in confined places, and many more.

Accidents can also occur outside the worksite when heavy construction material, equipment and construction waste are being transported.

The people most at risk, and whose safety need to be looked after, are workers at and visitors to worksites. Also potentially at risks are members of the public who are living, working, driving or walking near construction sites.

While everyone who enters a worksite can protect themselves by having their personal protection equipment on, a helmet or safety boots will not be of much help if work activities are still carried out in a dangerous manner.

The fundamental principle in worksite safety is that the safest way of doing an activity is the correct way of doing it. In other words, danger at the worksite is reduced if all activities on site are done according to their correct, prescribed manner, and following best practices.

How can one ensure that each of the hundreds of thousands of activities in the MRT Project are done correctly all the time?

To ensure that any activity in a particular worksite, be it excavating or constructing something, is done correctly and safely, a document called a work method statement is required. The work method statement has to be vetted by a series of engineers and safety officers, before the activity can be carried out.

These documents basically set out in detail every step which should be taken for a particular activity. The work method statement will outline all hazards associated with the activity and prescribe steps or ways to mitigate the risk of accidents arising from the activity.

For example, the work method statement for the transportation of concrete tunnel lining segments will cover how the segments are to be loaded onto the trailer, how the segments are arranged on the trailer, how they are secured onto the trailer, the prescribed route to be taken by the trailer and how they are to be unloaded.



■ **KEEPING COUNT** • A tally board system ensures everyone who is working underground is accounted for.

For extremely risky work, on top of work method statements, safety officers are required to supervise closely while that activity is being carried out. The operation machinery which are potentially dangerous, such as cranes, require permits which details what the crane is allowed to do before they can be operated.

ENSURING THE WORK METHOD IS FOLLOWED

While it is good that work method statements are drawn up, they would not be of much use if they are not followed at the worksite. How does one ensure that work method statements are adhered to?

First and foremost, every worker who is involved in an activity has to understand and follow the work method contained in a work method

If for some reason a step in the work method statement has not been followed, the Supervising Consultant has to flag this out. The activity has to be stopped immediately until what was not done in the first place is ultimately done.

Following the span toppling incident, the MRT Project Delivery Partner have increased supervision at all worksites along the MRT elevated alignment by employing 60 additional Safety Supervisors. These supervisors will enable closer scrutiny of work activities on site to ensure compliance with the proper work methods.

While policing and supervision to ensure compliance with proper work practices are important, it is obvious that this is not sustainable over the long run. It is just not possible to keep an eye on every single worker for every single activity at every single worksite.



■ **MINIMISING RISK** • With proper protection, such as wearing a harness when working at height, the safety of workers can be ensured.

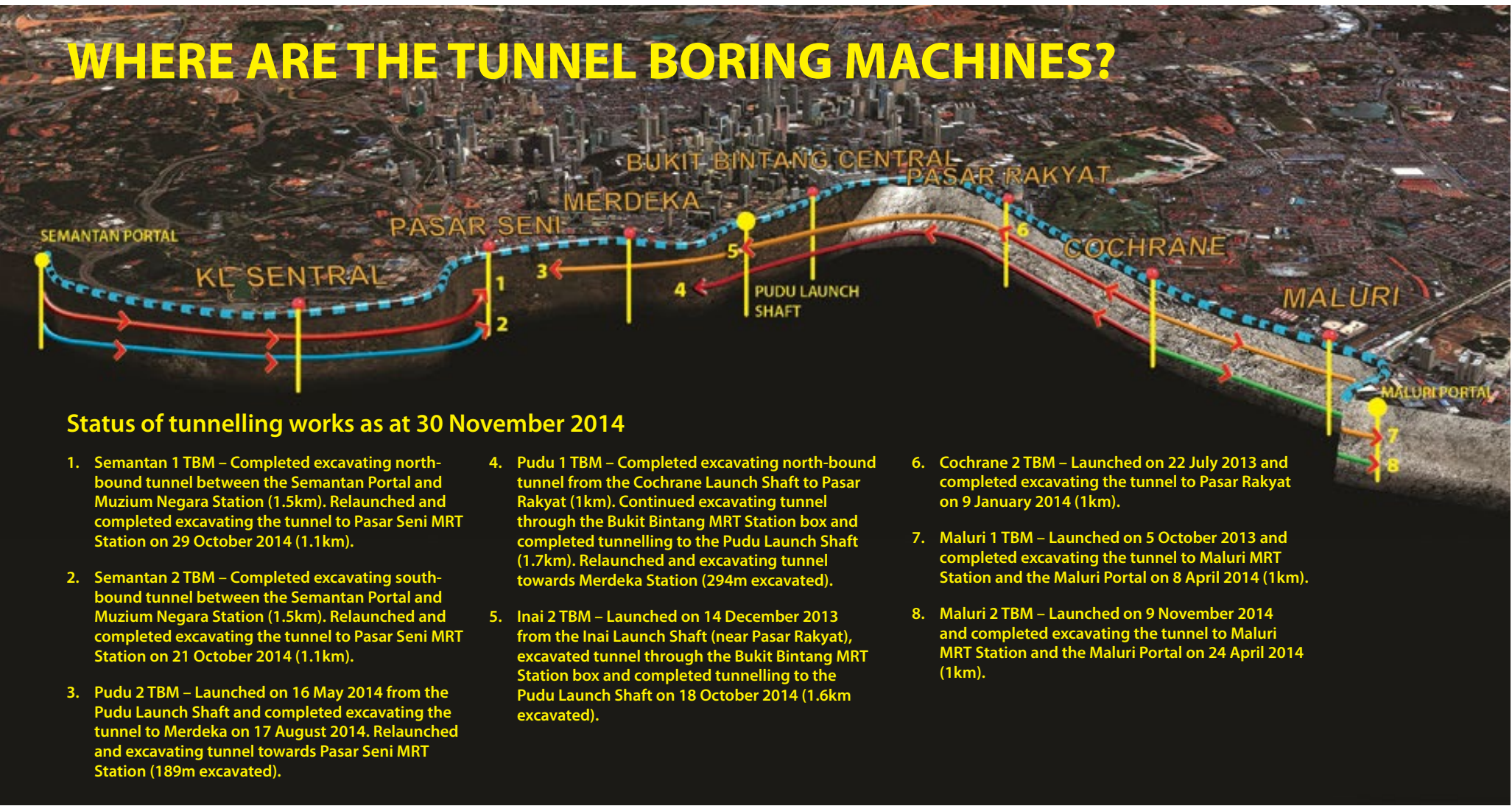
statement. Making every worker understand this can be extremely challenging in an environment where many are unskilled and trained to a minimal level, and are not familiar with Bahasa Malaysia or English.

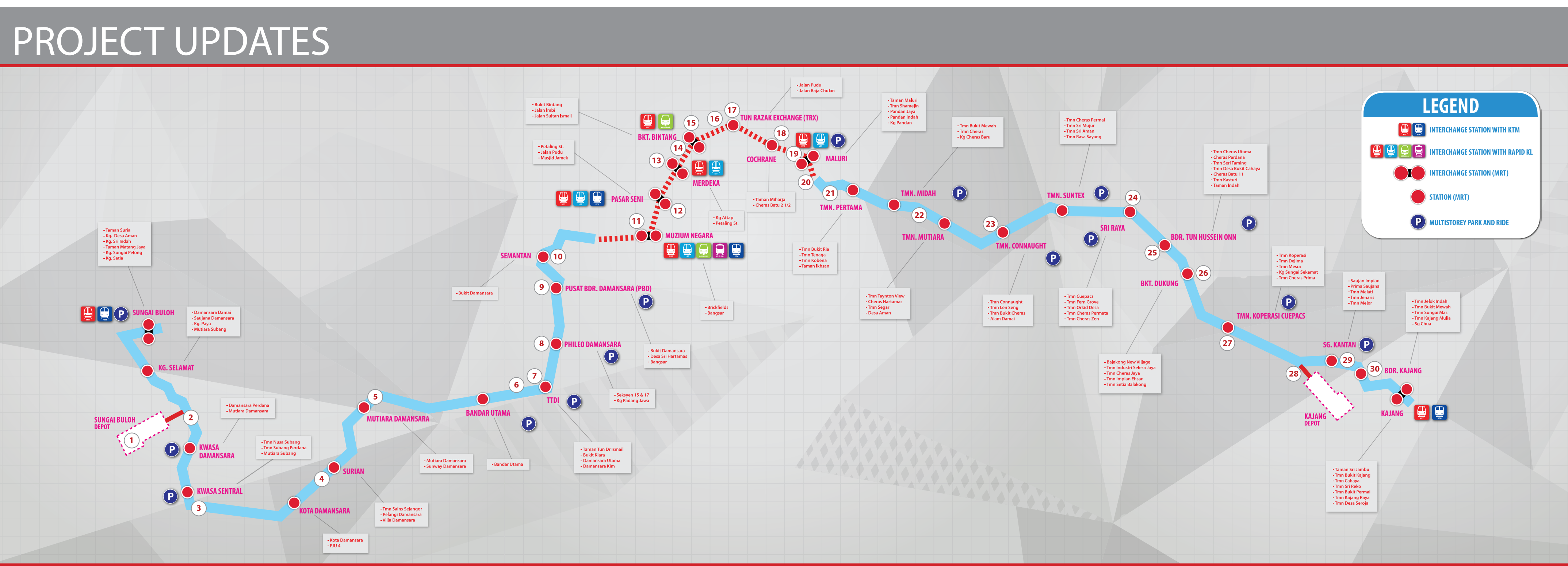
Work methods are disseminated via tool-box briefings at the start of the activity. Once work activities have started, constant supervision needs to be carried out.

For the MRT Project, a team of people called Supervising Consultants have been tasked with ensuring proper work procedures are followed throughout the project. Supervising Consultants have to check and certify that a particular task has been done correctly before another activity that is prescribed in the work method statement can be carried out.



■ **PUBLIC SAFETY** • Various steps are taken to minimise the risk of accidents from MRT worksites.





1

TRACKS LAID
Aerial view of the Sungai Buloh Depot showing the administration building cum operations control centre, infrastructure building (right), rolling stock maintenance building (middle) and covered stabling yard (left).

2

FUTURE DEVELOPMENT
The MRT guideway and Kwasa Damansara Station being built to cater for the future Kwasa Damansara development.

3

GREEN SURROUNDINGS
Kwasa Sentral Station being built inside the former RRI site which will become the future Kwasa Damansara township.

4

COMPLETED
The completed guideway near Pasar Muihbbah Kota Damansara heading towards Persiaran Surian.

5

TIGHT SPACE
MRT construction taking place within a narrow strip of space at Mutiara Damansara.

6

BRIDGING THE GAPS
Special spans of the MRT guideway being built along the Damansara-Puchong Expressway at Taman Tun Dr Ismail.

7

IMPRESSIVE
The completed guideway and construction of the Taman Tun Dr Ismail Station along Jalan Damansara at Taman Tun Dr Ismail.

8

SCENIC SITE
The completed MRT guideway along the SPRINT Highway beside Kelab Golf Perkhidmatan Awam.

9

CHALLENGING SITE
Aerial view of the construction of the Pusat Bandar Damansara Station over SPRINT Highway's Ma'arof Interchange.

10

OVER THE ROAD
Beams for the Semantan Station being erected over Jalan Semantan.

11

IN PROGRESS
The platform of the Muzium Negara Station being constructed next to the tunnel opening.

12

TAKING SHAPE
Launch gantry constructing the MRT guideway along Jalan Cheras near Taman Biliion.

13

BUSY SITE
Construction of the upper concourse level slab of the Merdeka Station in progress.

14

BREAKTHROUGH
The breakthrough of the Tunnel Boring Machine Inai 2 after its breakthrough at the Pudu Launch Shaft in October 2014.

15

BENEATH THE HUSTLE
The concourse level of the Bukit Bintang MRT Station taking shape beneath busy Jalan Bukit Bintang.

16

TUNNEL VISION
The work locomotives inside the tunnel near the Inai Launch Shaft.

17

COMING UP
The platform level of the Tun Razak Exchange Station being constructed.

18

REACHING THE TOP
View of the construction of the upper plant room and roof of the Cochrane Station.

19

BASE SLAB WORK
Construction of the base slab for the Maluri MRT Station in progress.

20

SOUTHERN END
View of the two tunnel openings at the Maluri Portal, and construction of the cut-and-cover tunnel section being carried out.

21

NOISE REDUCTION
The MRT guideway near the Sri Sabah Flats with structures for sound barriers being constructed.

22

PUSHING FORWARD
Launch gantry constructing the MRT guideway along Jalan Cheras near Taman Biliion.

23

NARROW SITE
View of the Taman Connaught Station and the MRT guideway being constructed.

24

FULL SPEED AHEAD
Construction of the Sri Raya Station in progress at Cheras Batu 10.

25

TAKING SHAPE
Construction of the Bandar Tun Hussein Onn Station in progress.

26

PUSHING AHEAD
The Bukit Dukung Station being constructed.

27

BY THE HIGHWAY
Construction of the Taman Koperasi Cuepacs Station and the MRT guideway along the Cheras-Kajang Highway in progress.

28

SPECIAL CROSSING
Aerial view of the construction of the MRT guideway over the Cheras-Kajang Highway for the branch line leading to the Kajang Depot being constructed.

29

NEW STATION
Construction of the Sungai Kantan Station above Jalan Cheras in progress.

30

FULL SWING
Aerial view of the construction of the Bandar Kajang Station beside the Kajang Stadium.

STRENGTHENING TEAMWORK

By Nik Haizan Nik Zambr



■ Team members work together to build a bridge using newspapers.



■ Rafts are ready for the race.



■ Survival cooking in the jungle using bamboos as pots.

RECOGNISING that teamwork among the staff of a workplace is an important part of an effective organisation, Mass Rapid Transit Corporation Sdn Bhd (MRT Corp) recently organised a teambuilding programme for all its employees.

Nine sessions were held with each session having around 40 participants at FELDA Residence in Trolak, Perak. There are currently 344 employees working with MRT Corp.

The first session took place during the weekend of 20 June 2014. Before departing to Trolak by bus, the participants were briefed by MRT Corp Director of Strategic Human Resource Encik Zainuddin Ismail.

At Trolak, the programme kicked-off with an ice-breaking session where the participants introduced themselves and their roles at MRT Corp. They were then divided into four groups,

with each group comprising eight to nine members from various departments.

All the activities for the programme were designed to promote participation from each individual. Activities included doing the Maori War Dance or Haka, orienteering, survival cooking and night “explorace” which involved members of each group searching for clues to lead them to the end of the race.

One of the most interesting and challenging activities required the participants to design and build a bamboo raft. Once completed, the rafts were placed in a lake and all members of each group were required to get onto the raft they constructed. They then had to row it across the lake and back. If a group member fell off the raft, that group would be disqualified.

On the last day, the final activity involved the drawing up of a wish list for MRT Corp. The participants scribbled notes on how they could contribute to make MRT Corp transform from a good to a great company.

Although packed with both mentally and psychically challenging activities, the participants were extremely enthusiastic and thoroughly enjoyed themselves. More importantly, they walked away from the session with a better understanding of their colleagues, and a clearer vision of the common path for MRT Corp.



■ The Maori war dance or Haka competition held in the FELDA Residence compound.



■ Datuk Wira Azhar Abdul Hamid (fifth from right) with MRT Corp's senior management.



■ Guest writing messages in memory of the MH17 & MH370 tragedies.



■ Datuk Wira Azhar Abdul Hamid and Datin Wira Aminah Elzeth Ibrahim handing out 'duit raya' to children from Rumah Bakti Nur Syaheera.

HARI RAYA CELEBRATED IN MODERATION

By Nadia Azmi

WITH Hari Raya songs in the background and people clad in colourful baju kurung and baju Melayu, the joyful Hari Raya mood could be felt by everyone at the Mass Rapid Transit Sdn Bhd's (MRT Corp) Hari Raya Open House on Saturday, 16 August 2014.

The event, held at the Matrade Exhibition and Convention Centre, was attended by around 1,000 people. Besides MRT Corp staff and their families, staff from MMC Gamuda KVMRT (PDP) Sdn Bhd, MMC Gamuda KVMRT (T) Sdn Bhd, MRT Project work package contractors, consultants and associates of the project also attended the event.

MRT Corp Chief Executive Officer Datuk Wira Azhar Abdul Hamid and his wife Datin Wira Aminah Elzeth Ibrahim greeted the guests who began arriving at 12.00 noon.

Besides enjoying the delicious food, guests were entertained by a group of school children from Sekolah Rendah Kebangsaan Convent Kajang, which is located next to the future Kajang MRT

Station. They sang four songs and performed a traditional Malay dance called Tarian Aidiilfitri.

The event was made more meaningful with orphans from Yayasan Anak-Anak Yatim Wardatul Jannah and Rumah Bakti Nur Syaheera joining in the celebration. MRT Corp also donated RM2000 to each of the two orphanages. Both orphanages are located along the MRT alignment.

Guests had a lot of fun with the photowall where they snapped photos of themselves in front of a huge artist impression of the platform of the future Muzium Negara MRT Station. There were also “call-out cards” with messages which guests could hold up, and cut-outs of Facebook and Instagram frames for guests to hold up and be photographed.

In memory of the lives lost in the MH17 and MH370 tragedies, guests were encouraged to write messages on cards which were then tied onto a memorial wall inside the hall.



DID YOU KNOW THAT ...

THE oldest continuously operating railway line in Malaysia is that between Kuala Lumpur and Klang. The line was opened on 15 September 1886 between Kuala Lumpur and Bukit Kuda, and was extended to Klang four years later. The KTM Komuter operates along this line today. Although Malaysia's first railway began operating between Taiping and Port Weld (Kuala Sepetang) on 1 June 1885, train services stopped in the 1960s.

SPAD VISIT TO MRT SITES

By Leong Shen-li

THE Klang Valley MRT Project hosted a delegation from the Suruhanjaya Pengangkutan Awam Darat (SPAD) which visited several sites on 8 September 2014.

Led by its Chairman Tan Sri Dato' Sri Syed Hamid Albar, the delegation included SPAD's Members of Commission, Chief Executive Officer Encik Mohd Nur Kamal, senior management and officials from its Rail Division.

They were received by Mass Rapid Transit Corporation Sdn Bhd (MRT Corp) Chief Executive Officer Datuk Wira Azhar Abdul Hamid at the Muzium Negara Station (formerly called the KL Sentral MRT Station) site.

Also present were MRT Corp Director of Stakeholder Relations and Land Management Encik Haris Fadilah Hassan and MMC Gamuda KVMRT (T) Sdn Bhd Project Director Mr Satpal Bhogal.

The visit began with a briefing by MRT Corp Director of Underground Stations Mr Keith Allenby on the progress of the construction of the MRT Sungai Buloh-Kajang's seven underground stations and the activities being carried out at the Muzium Negara Station.

The delegation learnt that the station was being built using a top-down method where the roof slab was constructed after the diaphragm walls were completed. Excavation downwards was then carried out beneath the roof slab until the base of the concourse slab. Subsequently, after the concourse slab was built, excavation to the base level of the station was carried out and the base slab constructed.

At the same site, Director of Underground Tunnelling Mr Blaise Mark Pearce briefed the delegation on the Project's tunnelling activities. From the station, the group walked into a section of the tunnels which ran between Muzium Negara Station and the Semantan Portal. The tunnels between the station and the portal were the first to be completed using tunnel boring machines.

From Muzium Negara Station, the delegation travelled to the Sungai Buloh Depot by bus where they managed to view the entire northern elevated section of the MRT Sungai Buloh-Kajang Line. They were briefed on the construction of the elevated section throughout the journey by MRT Corp Director of Elevated Construction (Northern) Mr Goh Tze Kh'ng.

At the depot the delegation viewed the progress on construction and trackwork as well as preparations to receive the first MRT trains, expected to take place in November this year. The walkabout there was led by MRT Corp Director for Systems Mr Tom Khella.

The depot is the largest in Southeast Asia and was designed to cater to both the MRT Sungai Buloh-Kajang Line and the future MRT Sungai Buloh-Serdang-Putrajaya Line. Besides overnight stabling of trains, the depot will also be the location for the trains to be cleaned and maintained.

The visit ended at the depot and the delegation returning to SPAD's Headquarters at KL Sentral.



■ Mr Keith Allenby (yellow vest) leading Tan Sri Dato' Sri Syed Hamid Albar (right), Encik Mohd Nur Kamal (left) and SPAD Chief Development Officer Encik Azmi Abdul Aziz (second from left) at the concourse level of the station.



■ The delegation being briefed by MRT Corp Depot Equipment Manager Encik Azlan Mahmud (third from left) inside the rolling stock maintenance building of the Sungai Buloh Depot.



■ The delegation inside the completed tunnel.

MEDIA TOUR OF MERDEKA AND PASAR SENI MRT STATIONS

By Nadia Azmi

THE media got a tour of the MRT Sungai Buloh-Kajang Line's Merdeka and Pasar Seni underground station sites which are located in the heart of Kuala Lumpur.

During the visit which was held on 8 July 2014, the media were also shown the vicinity of the two stations including Jalan Sultan and Jalan Petaling where construction activities for several non-MRT projects were taking place.

The visit was led by Mass Rapid Transit Corporation Sdn Bhd (MRT Corp) and its underground contractor, MMC Gamuda KVMRT (T) Sdn Bhd (MGKT). The visit started with a briefing session by MGKT Construction Manager Encik Yusni Shahadan and a walkabout inside the Merdeka Station site.

The journalists then walked along Jalan Hang Jebat and Jalan Sultan to the Pasar Seni MRT Station.

Of special interest during the visit was how the MRT Project managed its drainage system and rainwater run-off containment at the two station construction sites.

The Jalan Sultan area has been inundated with flash floods during heavy rain. The media learnt how the project's drainage and waste-water management had ensured that construction work did not contribute to any of the flooding.

The media was also told that the slope at the Merdeka Station allowed all water to flow along the drainage system towards Jalan Hang Tuah and not towards Jalan Sultan.

At the Pasar Seni MRT Station site, the journalists were shown the perimeter drain which prevented any water run-off from exiting the site. They also saw the waste water treatment system which de-silted water from the construction site before being discharged into the Klang River.

The walkabout ended with a question and answer session back at the Merdeka Station site with MRT Corp Director of Strategic Communications and Public Relations Encik Amir Mahmood Razak.



■ MRT Corp Director of Strategic Communications and Public Relations, En. Amir Mahmood Razak (using hailer) talking to the media on the Merdeka Station site's drainage system.



■ At the MRT Pasar Seni Station site, the media saw how waste water is de-silted and treated before being discharged.

DIRECTOR GENERAL OF LAND AND MINES VISITS COCHRANE UNDERGROUND STATION SITE

By Fiziylana Hilda Fahrurrazi

THE Director General of Land and Mines, Dato' Sri Haji Azemi Kasim visited the Cochrane Launch Shaft and Underground Station site on 9 April 2014 to view first hand the progress of the MRT Project.

With him were a delegation of officers from the Department of the Director General of Land and Mines. They were greeted by Mass Rapid Transit Corporation Sdn Bhd (MRT Corp) Chief Executive Officer Datuk Wira Azhar Abdul Hamid.

The Department of Land and Mines was directly involved in the MRT Project as it was the Government agency which handled land acquisition matters during the initial stages of the Project.

The visit began with a briefing by MRT Corp Director of Tunnelling, Mr Blaise Pearce where the delegation learnt about the technology involved in the excavation of the MRT underground alignment.

From the briefing, the delegation learnt of the Variable Density Tunnel Boring Machine which

was specially designed to handle tunnelling through the Kuala Lumpur Limestone Formation, which lies beneath the eastern half of Malaysia's capital city.

After the briefing, they were brought to the viewing gallery at the top of the launch shaft where they got the opportunity to see the construction of the Cochrane Station taking place inside the launch shaft.

The Cochrane Launch Shaft, which is about 30m deep, was where four tunnel boring machines began tunnel excavation. After the TBMs completed excavating the tunnels, the launch shaft became the station box for the Cochrane Underground Station.

The delegation descended into the shaft using a work elevator. Besides observing at close range the construction activities which were being carried out, the delegation also managed to walk a distance into a completed tunnel.

The visit ended with both parties exchanging mementos.



■ **OVERVIEW** • Director of Tunnelling, Mr Blaise Pearce giving Director General of Lands and Mines, Dato' Sri Haji Azemi Kasim an overview of the works that are taking place at the Cochrane Station site.



■ **INTERESTING** • Delegates at the opening of the tunnel inside the Cochrane Launch Shaft.

COMMONWEALTH CIVIL SERVANTS TOUR BUKIT BINTANG STATION

By Fizliyana Hilda Fahrurrazi

THE 10th Commonwealth Association for Public Administration and Management (CAPAM) Biennial Conference was held from 19 to 21 October 2014 which saw the gathering of senior civil servants from Commonwealth countries and other participants in Putrajaya.

One of the technical visits organised in conjunction with the conference was to the Bukit Bintang MRT Station construction site.

The underground station, which is being built beneath busy Jalan Bukit Bintang in the heart of Kuala Lumpur's Golden Triangle, is considered one of the most challenging of the seven underground stations.

A group of 16 CAPAM delegates from Canada, Kenya, Nigeria, Singapore, the United Kingdom and Malaysia visited the site on 20 October 2014.

Departing from the Putrajaya International Convention Centre, the delegation was brought to Mass Rapid Transit Corporation Sdn Bhd (MRT Corp) headquarters in Bukit Damansara.

There, they were welcomed by Director of Strategic Communications and Public Relations Encik Amir Mahmood Razak who also gave an introduction of the MRT Project. They were then given a technical overview of the Project by Director of Underground Tunnelling Mr Blaise Pearce.

The delegation then boarded their bus and went to the Bukit Bintang Station site where they were

greeted by Director of Underground Stations Mr Keith Allenby.

During the tour of the site, the delegates were brought beneath road level to the station's concourse level which was still being excavated.

They saw first-hand how the station, which is located in an extremely congested commercial area of Kuala Lumpur was being constructed.

The station, which measures 150m long, 24m wide and will ultimately be 33m deep, will have four levels. There are two platform levels with the upper platform for Kajang-bound trains, and the lower platform level for Sungai Buloh-bound trains. This stacked formation had to be adopted because of the narrow space for the station.

Mr Allenby explained that the station was being constructed using the top-down method. This meant construction began with the roof after the station box diaphragm walls were completed, followed by further excavation and construction of floors downwards until the base slab, which would be the last slab to be constructed.

Once completed, the station will improve tremendously accessibility into Bukit Bintang, a popular tourist destination in Kuala Lumpur.

After spending some time inside the underground station, they came back up to ground level for a group photograph. Light refreshment was served before they boarded their bus to head back to Putrajaya.



■ **HOW IT'S DONE** • Mr Keith Allenby (middle) explaining to the delegates how construction of the Bukit Bintang Station is being carried out.



■ **VIP VISITOR** • The visitors on the way to the staircase to descend to the concourse level.



■ **GOOD VISIT** • Delegates posing for a group photograph at the end of the visit.

MRT PROJECT WELCOMES VISITORS FROM HONG KONG

By Elia Fitriana Azizan



■ **TOURING THE STATION** • Professor Anthony Cheung (fourth from left) being briefed by Mr Keith Allenby (fifth from left) as they look down to the platform level from the concourse level. With them is Encik Amir Mahmood Razak (third from left), other members of the Hong Kong delegation and engineers from MRT Corp and MMC Gamuda KVMRT (T) Sdn Bhd, the underground works contractor of the MRT Sungai Buloh-Kajang Line.

MASS Rapid Transit Corporation Sdn Bhd (MRT Corp) welcomed a delegation from Hong Kong on 4 December 2014 led by its Secretary of Transport and Housing Professor Anthony Cheung.

The delegation was shown around the Muzium Negara Station site by MRT Corp Director of Underground Stations Mr Keith Allenby and Director of Strategic Communications and Public Relations Encik Amir Mahmood Razak.

Besides Prof Cheung, the delegation included Mr Keith Giang, a representative from the Hong Kong Special Administrative Region Government, and Hong Kong Economic and Trade Office (ASEAN) Director Mr Fong Ngui.

Prof Cheung was shown around the concourse and platform levels of the underground station. Throughout the visit, he was briefed on the activities being carried out at this stage of construction.

Mr Allenby explained that the top down construction method was adopted for the

station because of the space constraints and also with the station being located directly in front of Muzium Negara.

As for the architecture of the station, Mr Allenby said the station entrance structures which will be located at ground level has been designed not to compete with the National Museum's iconic facade.

In terms of integration, Encik Amir mentioned that this station will be connected with KL Sentral, the hub of Kuala Lumpur's existing rail network.

During the tour, Prof Cheung asked several questions, including what measures MRT Corp adopted to control the cost of the project. He also inquired about issues related to the use of foreign labour for the project of this size.

The Klang Valley MRT Project has hosted visits by several groups of overseas visitors, including engineers from MRT Jakarta, students from Norway and Indonesia as well as groups from other countries.

HAPPENINGS



■ **HIGH-LEVEL VISIT** • Auditor General Tan Sri Ambrin Buang (red collared shirt) led a visit by the National Audit Department to several MRT Project sites on 17 July 2014.



■ **FOR THE CAMERA** • A delegation from Keretapi Tanah Melayu Berhad posing for the camera after a visit to the Muzium Negara Station on 19 September 2014.



■ **STRENGTHENING TIES** • MRT Corp organised a media iftar on 16 July 2014 during the holy month of Ramadan.



■ **ALL SMILES** • The MRT Project Information Centre in Damansara Utama, Petaling Jaya, hosted a visit by 21 quantity surveyors on 18 August 2014 in conjunction with the Quantity Surveying International Convention in Kuala Lumpur.

GOODBYE, DATUK WIRA AZHAR

By Nik Haizan Nik Zambr



■ **LAST MESSAGE** • Datuk Wira Azhar addressing MRT Corp staff during his farewell lunch.



■ **PLEDGE** • Datuk Wira Azhar Abdul Hamid and the Directors of MRT Corp looking at the plaque containing a pledge signed by all staff.

IT was a sad afternoon for the staff of Mass Rapid Transit Corporation Sdn Bhd (MRT Corp) as they bid farewell to their Chief Executive Officer of more than three years, Datuk Wira Azhar Abdul Hamid.

The company held a farewell lunch at the Sime Darby Convention Centre on 8 December 2014 which was attended by over 300 staff. The event began at 12.30pm with a welcome note from the Director of Strategic Communications and Public Relations Encik Amir Mahmood Razak on behalf of all MRT staff.

This was followed by a short video clip comprising a compilation of pictures and snippets taken during his time in the company. The video clip, which touched the hearts of many who were at the lunch, ended with a message from the staff thanking him for his contributions to the company and MRT Project.

After the video presentation, Datuk Wira Azhar delivered his final speech as Chief Executive Officer to the staff of MRT Corp. Despite him leaving the MRT Project, Datuk Wira Azhar still reminded the staff of the need to deliver the project on time.

"I want you to keep carrying on with the good work that has been shown since MRT Corp was established. And I want you to make sure that you always do the right thing," he said.

When lunch was served, Datuk Wira Azhar took the opportunity to go from table to table to meet every single staff present that day. At every table, photographs were taken and good wishes for the future were exchanged.

Renowned jazz singer Atilia Haron was invited to the lunch where she sang songs like *You To Me Are Everything* by The Real Thing and *You've Got A Friend* that was made popular by James Taylor. Atilia ended her performance with her rendition of *My Way* by Frank Sinatra.

When the eating was done, Datuk Wira Azhar was invited to the stage where he was presented with a plaque which was engraved with a pledge to deliver the project on time while putting safety as a priority. The plaque was signed by every MRT Corp staff.

A cake, with a construction theme, was then wheeled out for him to cut. The farewell lunch ended with more photographs being taken.

Datuk Wira Azhar tendered his resignation following an incident on 18 August 2014 where an elevated guideway span toppled, killing three workers instantly. He said he resigned because he took personal responsibility for the "pointless deaths" of Mr Mohammad Alauddin Mollik, Mr Mohammad Elahi Hossain and Mr Mohammed Faruk Khan.

Datuk Wira Azhar was appointed CEO of MRT Corp on 1 September 2011 and his last day was on 31 December 2014.



■ **SMILE!** • A selfie moment with Datuk Wira Azhar.



■ **FOR THE OCCASION** • Datuk Wira Azhar cutting a construction-themed cake during the farewell lunch.



■ **FOR THE ALBUM** • Members of the Project Team with Datuk Wira Azhar.

JALAN SULTAN STAKEHOLDERS BRIEFED AHEAD OF TUNNELLING

By Wallace Soh Chun Hwei

TWO engagement sessions with stakeholders from Kuala Lumpur's Jalan Sultan were held in November ahead of the construction of the MRT tunnel in the area.

The first tunnel boring machine, named Pudu 2, will begin excavating the tunnel for future Kajang-bound MRT trains in the area in the beginning of December 2014. The second TBM, Pudu 1, which will excavate the tunnel for Sungai-Buloh-bound trains, will reach the area in January.

One of the terms of the Mutual Agreements which were signed between Mass Rapid Transit Corporation Sdn Bhd (MRT Corp) and the owners of 17 shoplots along Jalan Sultan, enables the MRT tunnel to "co-exist" with these properties. As such, tunnelling through these properties could be done without them being compulsorily acquired by the Government.

The existing shops along the road would not need to be demolished when the tunnel is excavated about 30m beneath them.

The principle of co-existence was mooted by MRT Corp Chief Executive Officer Datuk Wira Azhar Abdul Hamid in 2011 as a solution to avoid compulsory acquisition of these shoplots.

This solution was possible because of the suitable geological formation of the area and due to the shops having shallow foundations. Some building strengthening works were carried out to the shops earlier this year.

The construction of MRT tunnels beneath the historic street, which is located in Kuala Lumpur's "Chinatown", attracted a lot of attention and protests when the alignment was revealed to the public in 2011.

With the introduction of the principle of co-existence, the owners of the shoplots were grateful that they were able to keep their properties and began working closely with MRT Corp to enable tunnelling to be carried out without any problems.

During the engagement session on 11 November 2014, owners whose shoplots will be located directly above the tunnel were briefed on the timetable of tunnel excavation works, and what to expect when tunnel excavation was being carried out.

They were told that monitoring was going to be carried out round the clock when tunnel excavation was taking place. Monitoring will also continue after the tunnel had been built.

A week later on 18 November 2014, a similar engagement session was held with owners whose lots were not directly above but adjacent to the tunnel alignment.

Both sessions were led by MMC-Gamuda KVMRT (T) Sdn Bhd, the contractor undertaking the underground works of the MRT Sungai Buloh-Kajang Line, with presence of MRT Corp representatives.

"The two engagement sessions, as well as many others before, reflect MRT Corp's commitment to protect the old buildings at Jalan Sultan by working with the stakeholders there," said Encik Haris Fadzilah Hassan, MRT Corp Director of Stakeholder Relations and Land Management.

Tunnelling works at the Jalan Sultan area is expected to be completed by the end of the first quarter of 2015.



■ **FULL ATTENTION** • Participants listened attentively to the construction update presentation at the engagement session.



■ **PRESENTATION** • MMC Gamuda KVMRT (T) Sdn Bhd Head of Tunnelling Mr Ng Hau Wei presented construction updates to Jalan Sultan stakeholders at the engagement session.

PRELIMINARY ENGAGEMENT FOR LINE 2 STARTS

By Wallace Soh Chun Hwei

FACE-to-face dialogue sessions with stakeholders living or operating businesses near the proposed MRT Sungai Buloh-Serdang-Putrajaya Line or MRT Line 2 have commenced.

The sessions, comprising focus group discussions and case interviews, are being held as part of the Detailed Environmental Impact Assessment (DEIA), which is a requirement by the Department of Environment (DOE). Over 20 focus group discussions and case interviews will be held.

The DEIA began in late November 2014 and assesses the impact of the MRT Line 2 Project on the environment and communities along the proposed alignment.

An independent consultant has been appointed to carry out the DEIA.

At these dialogue sessions, the consultant will present the proposed alignment to the targeted stakeholders, who are then encouraged to provide feedback. Such feedback will form the basis to anticipate the impact of the Project on the environment and community.

Should the anticipated impacts exceed the acceptable levels determined by the DOE, the design of the Project will have to be amended, or measures to overcome or mitigate such impacts will have to be put in place in order to bring the impacts within permissible levels.

A DEIA report will be drawn up and made available to the public for one month. At this stage, all members of the public and not only those living or operating along the proposed alignment, will be able to provide further feedback.

Mass Rapid Transit Corporation Sdn Bhd Director of Stakeholder Relations and Land Management Encik Haris Fadzilah Hassan said with the DEIA and public display, it is hoped that the stakeholders' concerns can be addressed at the early stage.

"By the time the alignment is finalised, we hope that a large portion of the concerns would have been mitigated and construction works can be carried out smoothly," he said.

The public display of the DEIA report is a separate exercise from the public display of the MRT Sungai Buloh-Serdang-Putrajaya Line Railway Scheme. The railway scheme, which will contain the proposed alignment and technical details of the Project, will be made available for public feedback for a period of three months. This is expected to take place in March 2015.

Public interest on MRT Line 2 has gained momentum since Prime Minister Dato' Sri Najib Tun Razak announced the Project while tabling Budget 2015.

The length of the proposed alignment, which was drawn up by the Suruhanjaya Pengangkutan Awam Darat, is 59.5km. It will run along a corridor stretching from Sungai Buloh to Putrajaya via Kepong, Jalan Ipoh, Kampung Bahru, KLCC, Pandan, Cheras, Alam Damai, Bukit Belimbing, Seri Kembangan and Cyberjaya.



■ **BRIEFING** • Dr Kuppasamy Singaravello who is from the independent consultant handling the Detailed Environmental Impact Assessment showing the MRT Line 2 corridor to the residents of Pusat Perumahan Rakyat Pekan Batu.



■ **FULL ATTENTION** • The residents of Pusat Perumahan Rakyat Pekan Batu listening to the briefing and giving their opinions on the MRT Project.

TRAIN MODELS FOR FUTURE USERS

By Nik Haizan Nik Zambri

MASS Rapid Transit Corporation Sdn Bhd (MRT Corp) presented train models to Sekolah Rendah Kebangsaan (SRK) Convent Kajang and Sekolah Jenis Kebangsaan (C) Jalan Davidson in Kuala Lumpur. Both schools are located along the MRT Sungai Buloh-Kajang Line.

The move is part of MRT Corp's school engagement programme to promote the MRT and its benefits to the younger generation who will be the future users of the service.

The model of the "Hibiscus Star" train design was presented to the students and teachers of SRK Convent Kajang, which is located in front of the future Kajang MRT Station, during an event on 25 June 2015. The "Hibiscus Star" was one of three designs submitted by MRT Project train supplier Siemens AG of Germany. The other two designs were "The Guiding Light" and "Diamond Express".

Around 500 students attended the presentation ceremony. During the event, they expressed their appreciation for being presented with the model and greeted the MRT Corp team warmly. The train model, which measures 3.4m, is now displayed in the school canteen area.

On 7 July 2014, MRT Corp presented a second train model with the "Diamond Express" design to SJK (C)

Jalan Davidson. The school is located in front of the future Merdeka MRT Station. The train model would be displayed at a special corner called the "MRT Corner" near the school hall.

Around 1,700 students participated in the presentation ceremony which was held in the school hall. When the students viewed the model on stage, they were very inquisitive and asked many questions about the MRT. Many said they were looking forward to riding the trains once they become operational in July 2017.

The MRT Project Mobile Info Truck was also parked at the school compound for a week, giving the pupils and teachers easy access to information about the MRT Project. The MIT also had games such as Snake and Ladder, Spin and Win and MRT Trivia for the students to play.

Besides creating opportunities to introduce the MRT to the next generation, MRT Corp's school engagement programme also aims to establish better communication lines with schools located along the MRT Sungai Buloh-Kajang Line which may face some impact during the construction period.

The "Guiding Light" was the chosen design for the train. The four-car trains are currently being assembled in Rasa, Hulu Selangor.



MRT Corp Director of Strategic Communications and Public Relations Encik Amir Mahmood Razak sharing information about the MRT trains at SJK (C) Jalan Davidson.



The students of SJK (C) Jalan Davidson taking a closer look of the train model.



MRT Corp Director of Strategic Communications and Public Relations Encik Amir Mahmood Razak receiving a token of appreciation from SRK Convent Kajang Headmaster Puan Khatijah Yusof.

ANOTHER 26 WORK PACKAGES AWARDED TO BUMIPUTERA CONTRACTORS

By Nadia Azmi

MASS Rapid Transit Corporation Sdn Bhd (MRT Corp) held the third balloting session on 13 August 2014 to select Bumiputera contractors for 26 work packages for the construction of the MRT Sungai Buloh-Kajang Line.

The 26 contractors, comprising Grades G1, G2, G3 and G4, were selected from a pool of 420 contractors which had been shortlisted and screened earlier.

Contractors are graded by the Construction Industry Development Board of Malaysia (CIDB) and based on these grades they are eligible for a certain range of work package value.

Grade G1 contractors are eligible for work packages up to the value of RM200,000 while those in Grade G2 are eligible for work packages between RM200,001 and RM500,000. Grade 3 contractors are eligible for work packages between RM500,001 and RM1,000,000 while those in Grade 4 are eligible for work packages between RM1,000,001 and RM3,000,000.

The event began with a welcome note from MRT Corp Director of Stakeholder Relations and Land Management Encik Haris Fadzilah Hassan.

The first two sessions were conducted in January 2013 and December 2013 respectively.



Bumiputera contractors registering before the balloting session.



Group photo of all the 26 successful contractors for MRT Corp's third balloting session for Bumiputera contractors.



MRT Corp Director of Stakeholder Relations and Land Management Encik Haris Fadzilah Hassan delivering his welcome message.



Assistant Director of the Contractor Service Centre (PKK) En Mohd Shamir Zaini (right) picking a ballot with En Amir Mahmood Razak (left), MRT Corp Director of Strategic Communications and Public Relations looking on.



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MRT INFORMATION CENTRE

No. 52, Jalan SS21/1,
Damansara Utama, Petaling Jaya,
47400, Selangor.

Mon - Fri : **10:00am - 6:00pm**
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MRT CORPORATE HEADQUARTERS

MASS RAPID TRANSIT CORPORATION SDN BHD (902884-V)
Level 5, Menara I & P1
No. 46, Jalan Dungun
Bukit Damansara, 50490 Kuala Lumpur